National Institute of Environmental Health Sciences

Does mosquito control have an effect on mosquito-borne disease? The case of Ross River virus disease and mosquito management in Queensland, Australia

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Abstract:

We examined the relationship between types of mosquito control programs and the mosquito-borne Ross River virus (RRV) disease in Queensland, Australia. Mosquito control information was collected through a survey of the responsible agencies (local governments), and RRV disease notification data were provided by the Queensland state health authority. The study developed a typology of mosquito control programs, based on the approaches used. Based on the analysis of data on RRV disease rates between mosquito control types within 4 climatic regions, each region had different combinations of mosquito control strategies in their programs; there were also general similarities in the relationship between program types and RRV rates between the regions. The long-term RRV disease rates were lower in areas where the mosquito control program included pre-emptive (rather than reactive) surveillance based on an extensive (rather than incomplete) knowledge of mosquito habitats, and where treatment of both saltwater and freshwater habitats (compared to only saltwater habitats, in coastal areas) occurred. The data indicate that mosquito control is an effective public health intervention to reduce mosquito-borne disease; hence, climate change adaptation strategies should ensure that adequate resources are available for effective vector control so as to manage the risk of mosquito-borne diseases.

Source: Ask your librarian to help locate this item.

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Unspecified Exposure

Geographic Feature:

resource focuses on specific type of geography

Ocean/Coastal, Tropical, Other Geographical Feature

Other Geographical Feature : sub-tropical

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Australasia

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Vectorborne Disease

Vectorborne Disease: Mosquito-borne Disease

Mosquito-borne Disease: Ross River Virus

Intervention: ☑

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content